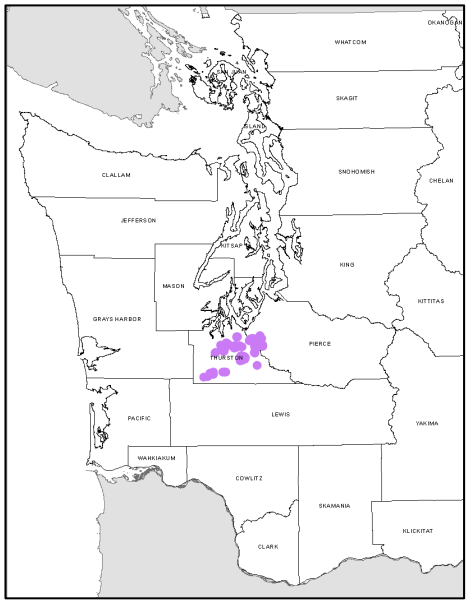
Species Fact Sheet for Olympia pocket gopher, Roy Prairie pocket gopher, Tenino pocket gopher, and Yelm pocket gopher (*Thomomys mazama* ssp. *pugetensis, glacialis, tumuli,* and *yelmensis)*

April 2014

Photo Credit: USFWS



Known occurrences of the Olympia pocket gopher, Roy Prairie pocket gopher, Tenino pocket gopher, and Yelm pocket gopher -- four subspecies of the Mazama pocket gopher in Thurston and Pierce Counties, Washington.

STATUS: THREATENED

Four subspecies of the Mazama pocket gopher (the Olympia pocket gopher, Roy Prairie pocket gopher, Tenino pocket gopher, and Yelm pocket gopher) (*Thomomys mazama* ssp. *pugetensis*, *glacialis*, *tumuli*, and *yelmensis*), became Federally listed by the U.S. Fish and Wildlife Service as threatened in April 2014.

Current and Historical Status

The Olympia, Roy Prairie, Tenino, and Yelm pocket gophers are regionally endemic subspecies of the Mazama pocket gopher found only in the State of Washington. The Olympia, Tenino, and Yelm pocket gophers are only found in Thurston County and the Roy Prairie pocket gopher is only found in Pierce County.

Distribution of these four subspecies of the Mazama pocket gopher in Thurston and Pierce Counties has likely always been somewhat patchy, since these pocket gophers are restricted by the kinds of soils they can use and soil types are naturally patchy in distribution. The number and size of rocks in the soil appear to strongly affect Mazama pocket gophers' ability to make a living in what may look like otherwise suitable soils, as does the kind of vegetation growing on the soil. Short flowering plants and grasses are the kind of vegetation Mazama pocket gophers like best, and they prefer to eat succulent roots, shoots, bulbs, and tubers. They avoid soils that are covered with forest or woody shrubs and Mazama pocket gophers can be crowded out by trees or invasive woody plants like Scot's broom.

The Olympia, Roy Prairie, Tenino, and Yelm pocket gophers most likely declined with the disappearance of prairies, grasslands, and meadows in western Washington. These subspecies are known to persist at multiple isolated sites scattered across southern Puget Sound prairies and grasslands. Some areas may contain several thousand individuals, but many contain only small numbers of individuals on marginal sites that are unlikely to persist. The largest areas known to be occupied by any of the four listed subspecies occur on Joint Base Lewis-McChord and at the Olympia airport. There is only one known population of Tenino pocket gopher, which is believed to consist of only a few animals.

Description and Life History

The Olympia, Roy Prairie, Tenino, and Yelm subspecies of the Mazama pocket gopher are small mammals ranging in length from 6 to 9 inches when measured from nose to tail. They're called pocket gophers because they have fur lined external pockets on either side of their mouth, kind of like chipmunks. Depending on the subspecies, Mazama pocket gopher fur can be blackish brown, dark brown, reddish brown, light yellowish brown, or buff colored. With small ears and tiny eyes, they are fossorial animals, which means they live their lives almost entirely under the surface of the soil. (It is true that juveniles are known to disperse above ground when it is time for them to make their own tunnel system, and sometimes, when the sun has just come up or is just about to set, Mazama pocket gophers will come out of their dens to fill their fur-lined cheek pockets with seeds and stems before running back below ground.)

Mazama pocket gophers are well adapted for life underground. They have short tubular bodies and strong arms equipped with long pointed claws that allow them to move a tremendous amount of dirt, which brings seeds in the soil to the surface and

provides a place for plants to germinate. All of their teeth grow continuously throughout their lives, because they use their teeth along with their long curved claws to sift the roots of plants out of the dirt as they dig their tunnels. Although their vision is poor, their highly sensitive tails may assist in navigation through tunnels. They use their cheek pouches to transport food and nesting material to special caches in their tunnel systems, which are vital to their survival, since they do not hibernate during winter months, but stay active all year long. Pocket gophers even have a special way to deal with waste: they use a tiny den in their tunnel system as a latrine and when the time comes, they block off the tunnel, which in turn enriches the soil with nutrients.

Mazama pocket gophers are territorial, preferring to live alone in their tunnels. Multiple gophers are only found in the same tunnel system during mating season or when the young, known as pups, are still with their mother in the spring and summer months, before the juveniles disperse to make their own tunnel systems during late summer and early fall. Mazama pocket gophers are only known to live for 1-2 years and sexual maturity is reached at 1 year of age. Males most likely mate with more than one female, but it is also likely that mating is based on female choice. Females are typically pregnant between 18 or 19 days before delivering a litter of five pups, on average. Unlike most other small rodents, or even other kinds of pocket gophers, Mazama pocket gophers are only known to produce one litter of pups a year.

Habitat

Olympia, Roy Prairie, Tenino, and Yelm pocket gophers live in well-drained, easily-crumbled soil, which describes many of the prairie soils that were deposited in Thurston and Pierce Counties after the last glacial retreat, 10,000 to 12,000 years ago. Pocket gophers don't use soils that have a high clay content, which is difficult for them to dig through and may not be as permeable to water, which may make it too wet for them to live in. Mazama pocket gophers also avoid extremely sandy soils that won't hold the shape of a tunnel. Everywhere the Olympia, Roy Prairie, Tenino, and Yelm pocket gophers occur, they occupy prairie-like habitat—areas that are relatively open, with short-statured vegetation and few woody plants.

Reasons for Decline

The greatest threat to Mazama pocket gophers in Washington State is the loss, fragmentation, and degradation of suitable habitat. To date, an estimated 95 percent of the prairies and prairie-like habitat has been converted to other uses or developed for commercial or residential use. In some areas, historical prairies have become overgrown with woody vegetation such as trees and shrubs. Fragmentation of the habitat has led to smaller areas of suitable habitat, and occupied areas that are separated from each other by distances too far for a gopher to travel or too difficult for a gopher to cross. In fragmented habitats gophers may be forced to cross roads or through neighborhoods where they're not only vulnerable to cars, but more vulnerable to above-ground predators like birds of prey, cats, and dogs. Populations that are small, fragmented, or isolated by loss of their naturally patchy habitat are more

vulnerable to a variety of forces that can lead to local extinction, such as randomly occurring natural events, genetic effects that plague small populations (known as small population effects), and cumulative effects (all negative effects acting together). Small population effects (including genetic drift and genetic bottlenecks) negatively affect the ability of a population to survive and grow and may amplify the effects of habitat loss and fragmentation. If too many individuals are lost from an already small population, that population may become extinct and there may be no other nearby population to recolonize the available suitable habitat.

Conservation Efforts

Preserving and restoring historic and existing gopher habitat is essential for the conservation of these subspecies. Due to the close association the Olympia, Roy Prairie, Tenino, and Yelm pocket gophers have with specific kinds of soils and vegetation, it is very important to preserve and restore as much habitat as possible where it currently exists. Since 2005, Joint Base Lewis-McChord has been working with the Center for Natural Lands Management on prairie habitat enhancement and management, thousands of acres of which are occupied by the Roy Prairie pocket gopher and the Yelm pocket gopher. Restoration and management of prairie habitats has also been initiated in other occupied areas in Thurston County, such as the Scatter Creek and West Rocky Prairie Wildlife Areas (owned and managed by Washington Department of Fish and Wildlife), Rocky Prairie Natural Area Preserve (owned and managed by Washington Department of Natural Resources), and on private lands through the Grassland Reserve Program which provides easement agreements through the U.S. Department of Agriculture's Natural Resources Conservation Service. The USFWS has been working with the Washington Department of Fish and Wildlife and Thurston County to develop a county-wide Habitat Conservation Plan, which will create a conservation framework for Federally protected species, such as the Olympia, Tenino, and Yelm pocket gophers, while still allowing for development.

There are many unanswered questions about the Olympia, Roy Prairie, Tenino, and Yelm pocket gophers and research is ongoing. Much of the ongoing research is guided by the Mazama Pocket Gopher Working Group, which has been meeting since 2006 and collaboratively prioritizes conservation efforts for the species. The Working Group membership is comprised of Federal, State, county, city, municipal, private, and non-governmental partners.

References and Links

Olympia pocket gopher ECOS web page
Roy Prairie pocket gopher ECOS web page
Tenino pocket gopher ECOS web page
Yelm pocket gopher ECOS web page
WDFW Mazama pocket gopher web page
Wolf Haven Mazama pocket gopher web page
Center for Natural Lands Management